and exit) were below 10 % (TLD and SEM detectors) with the exceptions for the neck at lateral and for the lungs at AP/PA fields where the errors exceeded 10 %.

Conclusions: For the group of patients the per cent deviations exceeded 10% for the neck exit in lateral fields and for the lung exit in anterior - posterior fields. Standard deviations exceeded 10% at the neck and lung exits in lateral fields and at the lung exit in anterior - posterior fields.

5.
SEDIMENTATION AS EFFECTIVE METHOD OF PRELIMINARY ISOLATION OF STEM CELLS FROM CORD BLOOD

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Cord blood is a rich source of primitive hemopoietic stem cells. In clinical hematology it is transplanted instead of bone marrow or peripheral blood stem cells. The Institute of Hematology and Blood Transfusion in Warsaw has had a Cord Blood Bank (WACB) since 1997. WACB collaborates with Eurocord Transplant Group and with Bone Marrow Donors Worldwide transfering data on frozen CB intended for transplantation. During 1997 – 2000, a total of 159 unrelated and 29 related cord blood units were collected. More than 70% of transplants of CB were perfomed in pediatric recipiens it is necessary to reduce its volume of storage of CB units. Separation techniques reduce sample volume to ± 20 ml. Sedimentation methods reduce the number of RBC to be infused. RBC depletion reduces the risk of incompatibile reaction. Sedimentation reduces side-effects of the DMSO (dimethyl sulfoxide) cytotoxity (DMSO volume is reduced to 4 ml).

The aim of our study was to evaluate methods of isolating leukocytes from cord blood within a closed system. Two methods of isolation have been tested: 6% hydroxyethyl starch in 0,9% NaCl and 3% gelatin in 0,9% NaCl (Gelafundine, Braun). Centrifugation and sedimentation methods have been used. The final volume of cord blood was 20 ml for each unit. The best results were obtained for sedimentation. With 3% gelatin sedimentation 75,1% WBC and 81,3% CD34+ were recovered, while the waste of RBC was 97,2%; with 6% HES sedimentation the results were: 65%; 90,3%, and 80,5% respectively. The results of our centrifugation methods revealed a great loss of progenitor cells (approx. 40%). 6% HES and 3% gelatin are approved for clinical use, therefore sedimentation methods based on these media are safe for recipients. Furthermore, the use of closed system recommended by Eurocord Transplant, prevents bacterial contamination.

6.
CHIMERISM-DIRECTED ADOPTIVE IMMUNOTHERAPY IN PREVENTION AND/OR TREATMENT OF POST-TRANSPLANT RELAPSE OF LEUKEMIA IN CHILDHOOD

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Purpose: We present the role of detailed and frequent monitoring of hematopoietic chimerism in prediction of post-transplant clinical outcome and our initial experience with adoptive immunotherapy (AI) in prevention and treatment of relapse in children after allogeneic hematopoietic stem cell transplantation (HSCT) for leukemia.

Materials and methods: Between 1/1997 and 12/2000 we performed a total of 46 unmanipulated allogeneic HSCT from HLA-identical siblings (MSD;23) or matched unrelated donors (MUD;23) in 43 consecutive children with hematological malignancies (ALL 16, AML 15, CML 5, MDS 6, JMML 3, CMML 1) with a median age of 10,5 years. We have analyzed hematopoietic chimerism in peripheral blood samples using polymerase chain reaction (PCR) of variable number